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BOARD OF EDUCATION.

Educational Pamphlets, No. 29.

*Educational Experiments in Secondary Schools,
No. iv.*

THE EXPERIMENT IN
RURAL SECONDARY EDUCATION
CONDUCTED AT KNARESBOROUGH.

LONDON :
PRINTED UNDER THE AUTHORITY OF HIS MAJESTY'S
STATIONERY OFFICE

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1915.

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PREFATORY NOTE.

The Board have power under Article 39 of the Regulations for Secondary Schools to augment the grant payable to a school, by such further amount as they think fit, towards meeting expenses incurred by the school in respect of special educational experiments approved by them. A grant under this Article was made to the Governors of the Knaresborough Grammar School for the year 1909-10, and has been continued since then, in order to facilitate the introduction of a modified curriculum specially suitable for pupils, both boys and girls, living in a country district and looking forward for the most part to pursuits of a rural kind. The Board appreciate the desirability of providing some alternative to the old traditional course of study in the rural Grammar Schools and were glad to assist an experiment in this direction. In the curriculum drawn up for this School, foreign languages were omitted, and the instruction in science and other subjects was so modified and organised as to give a rural bias to the whole of the school work. The experiment is not yet complete, but has been sufficiently advanced to justify the publication of the report upon the scheme adopted and the results so far attained. It is hoped at a later date to publish a fuller account of the experiment, and of any modifications which may be introduced into the curriculum in the result of further experience of its working. In the meantime this account is issued in the hope that it will be useful to school authorities and teachers in districts presenting similar conditions.

It will be understood that the Board do not by the publication of this pamphlet necessarily commit themselves to an approval of all the details of the scheme, nor are they responsible for the present account, which has been prepared by the staff of the school.

Office of Special Inquiries and Reports,

January 1915.

REPORT ON THE EXPERIMENT IN RURAL SECONDARY EDUCATION CONDUCTED AT KNARESBOROUGH.*

(KNARESBOROUGH RURAL SECONDARY SCHOOL.)

INTRODUCTORY.

Early in 1908 a number of petitions from the inhabitants of Knaresborough and the surrounding Rural District and from local Agricultural Societies, were presented to the West Riding Education Committee asking that the premises of King James's Grammar School, Knaresborough, might be utilised for the purposes of a continuation school with an agricultural bias.

The King James's Grammar School, a boys' school of old foundation, was closed on 21st July, 1905, owing to declining numbers. The Governors expressed themselves willing to co-operate with the Committee by allowing them the use of the premises and grounds on a yearly tenancy at a nominal rent, and the Board of Education by a Scheme sealed on November 16th, 1909, legalised the letting of the school site and buildings.

In the petitions referred to above, the West Riding Education Committee were asked to establish a school with a distinctly agricultural bias, to serve, *inter alia*, as a feeder for the agricultural course carried out at the County Farm, Garforth, where the educational work of the Yorkshire Council for Agriculture is carried out by members of the staff of Leeds University, and to provide a two years' course (or perhaps in some cases a three years' course) in continuation of the work of Standards VI. and VII. of the elementary schools.

The Committee had already provided at the Harrogate Secondary School secondary education of the normal type (including the training of teachers) for the district of which Knaresborough forms a part. At the time the petitions were received, however, the Committee had under consideration the possibility of arranging for vocational types of secondary education. After consideration of all the circumstances, it seemed to the Committee that the special needs of the district would be better met by a school providing secondary education on more than usually practical lines, and specially suitable for children living in rural districts, such education to be of a sound general nature, but designed to meet the probable special requirements of the after-school life of the children.

* This report deals for the most part with the first four years of the school's existence, *i.e.*, October 1908 to July 1912. It has, however, been found desirable occasionally to make reference to the session 1912-13, and events now passed are sometimes referred to in the future tense.

The Committee's original idea briefly was that the school should provide for pupils from 12 to 15 years of age, and that parents at the time of entering pupils should have some reasonable expectation that they would find in after life occupation on the land in one way or another.* It also appeared to the Committee that there was almost as much need of a special school of this type for girls as for boys, and this pointed to the desirability of establishing a school for boys and girls. Further, in the case of a country district of this kind, where children have to travel some distance along country roads or be driven to a railway station, it is customary for boys and girls from the same household to travel together.

Knaresborough, from its position, offered distinct advantages as the centre for a school of this nature, being the market town for a district of considerable extent. The railway service also is fairly satisfactory. The area more immediately served by the school consists of the Urban District of Knaresborough (pop. 1911, 5,315), and 24 rural townships with populations varying from 67 to 899. The total population is 12,870.

The area in the West Riding from which pupils have been drawn during the period covered by the report is shown on the map opposite.

Since its foundation the school has been directly administered by the West Riding Education Committee acting through its Higher Education Sub-Committee, and not, as is the usual practice in the West Riding, by a local Governing Body representative of the district, on which the County Council has representation. The special arrangement in this case was due to the experimental nature of the school.

THE BUILDING.

The premises of King James's Grammar School consisted of two blocks of brick buildings erected in 1899. The main block contained the Head Master's house, with good dormitories, a dining-hall, an art-room, a large school-room, a small class-room, a store-room, and a boys' cloak-room.

The Science block, detached from the main building, contained a woodwork shop, with some little equipment for metal work, a physical and electrical laboratory on the ground floor; a chemical laboratory with balance-room and a lecture-room on the first floor.

Previous to the opening of the Secondary School, the premises were renovated inside and out, the physical laboratory made suitable for nature study purposes, and the equipment of the carpenter's shop and chemical laboratory made good. The drainage and heating systems were thoroughly overhauled.

* It was ultimately not found possible to insist on this point (see pages 7, 24).

In order to meet the needs of a school for boys and girls, and to increase the insufficient class-room accommodation, a building constructed of wood, roofed with galvanised iron, was erected in such a position that the three blocks could be connected by a covered way and be heated from the central boiler situated in the basement of the main block. The temporary building contained two class-rooms, each 23 ft. \times 20 ft., and a room 27 ft. \times 23 ft. specially equipped for Cookery, Needlework and Laundry Work, together with a cloak-room and lavatory for girls.

It may be useful to state that the equipment of the Domestic Subjects room included necessary cupboards, shelving and sink, the usual supply of substantial movable tables, chairs with collapsible backs which could be stored under the tables when not in use, a gas-cooking stove, an American cooking stove of a type existing in several local farmhouses, a stove for heating irons, a Scarbro' boiler, various drying racks, and three sewing-machines. The minor equipment, utensils, etc., were of a good plain serviceable type, such as might usually be found in farm-houses.

A greenhouse 16 ft. \times 9 ft. fitted with heating apparatus was erected in the garden. This was subsequently enlarged by the addition of an unheated section 8 ft. \times 9 ft. The frames already in the garden were put into good condition.

A simple modification of the outside offices met the needs of a school for boys and girls.

The grounds of about $2\frac{1}{2}$ acres were in a desolate condition but were gradually got into order, a considerable portion of them being devoted to pupils' plots. The boys' plots, devoted to the cultivation of vegetables, varied slightly in area, but the average dimensions were 24 ft. \times 18 ft., each plot being worked by two boys. In addition were some experimental plots of various sizes and small plots were cultivated by the girls as flower gardens. A games field was also rented.

THE STAFF.

The initial appointments consisted of a head master, a graduate in Science, with good educational experience and a general knowledge and understanding of rural life and its conditions; a nature study master, trained at the Harper-Adams College, holding the National Diploma in Agriculture and the National Diploma in Dairying; an English mistress, a graduate in Arts with Honours in English; a Domestic Subjects mistress of good training, experience, teaching ability and adaptability. Assistance was given by visiting teachers as follows:—In Woodwork by a practical man with some teaching experience and a knowledge of the type of woodwork required for rural purposes; in Art and Physical Instruction by the County Organising Masters; in Music by a visiting master.

As the school developed, additional appointments were made in the following order: (1) at the opening of the third term of the school's existence, a master with special knowledge of modern practical methods of dealing with Geography; (2) at the beginning of the second year a master for Art and Handwork other than Woodwork; (3) at the beginning of the third year, a mistress for the Preparatory Department; (4) and at the beginning of the fourth year, a master with special qualifications in Mathematics and a visiting master for Poultry Keeping and Bee Keeping.

The staff in the fourth year of the school's existence thus consisted of the head master, four assistant masters, three assistant mistresses, and four visiting teachers for Woodwork, Singing, Art, Poultry Keeping and Bee Keeping. The Woodwork instructor visited the school on three days a week, the singing master twice a week, the master for Poultry and Bee-keeping once a week, and the County organising master for Art once a fortnight. During the first term of the session under consideration, there were 131 pupils on the register, distributed in Forms as follows:—

———				Girls.	Boys.	Totals.
Form	V.	-	-	3	12	15
"	IV.	-	-	7	12	19
"	IIIA.	-	-	14	15	29
"	IIIB.	-	-	14	14	28
"	IIIC.	-	-	—	16	16
Remove	-	-	-	10	14	24
						131

FEEES.

The petitions to which reference has been made asked that the fee should be 10s. 6d. per term. So low a fee was felt to be impracticable and the terminal charges at the opening of the school were 1l. 1s. for tuition, 3s. for stationery and use of books together with an optional games subscription of 2s.

In the second year the first two items were consolidated into one charge of 24s. per term.

When the numbers in the school were well over 100 it was found possible to increase the fee to 2l. 2s. per term covering all charges, so bringing the school into line with other Secondary Schools for which the West Riding County Council are financially responsible. The increased fee checked the flow of entries, but the material obtained was better. It was, perhaps, unfortunate that the raising of the fee coincided with the raising of the price of railway passes, an important consideration when 60 of the pupils came in by train and the average annual cost of a pass was over 3l.

The effect of the free place system was interesting; in the first and second years, in order to bring the school into touch with the more remote districts, the Committee made generous travelling allowances and in some cases where boarding was necessary paid a large proportion of the boarding fee. A considerable number of country children obtained free places, but when in the third and fourth year the Committee found it necessary to reduce very largely the amount of this help, few country children competed, and although every allowance was made for such children in the examination, town children gained most of the free places.

The boarding fee was arranged not to exceed 10*l.* 10*s.* per term. A reduction was made for weekly boarders, or for two or more members of the same family.

THE PUPILS.

The school was opened on 6th October 1908, and during the first week 38 pupils were enrolled, Very few—less than 20 of the 140, whose names were mentioned in the petitions as likely to attend—appeared, owing partly to the fee being in effect 24*s.* instead of 10*s.* 6*d.* per term as had been suggested, partly to the caution of local parents.

It is noteworthy that the farmers, even though they had signed the petition, held aloof until other people showed their confidence in the school. The following table illustrates this point quite clearly, the proportion of pupils whose parents were farmers or in other vocations connected with the land increasing progressively with the growth of the school :—

Parents' Occupations.	Numbers entering.										
	First Year.			Second Year.*		Third Year.*		Fourth Year.*		Totals.	
	Nos. 1st Term.	Nos. 2nd and 3rd Terms.	Per-cent- age.	Nos.	Per-cent- age.	Nos.	Per-cent- age.	Nos.	Per-cent- age.	Nos.	Per-cent- age.
Trade - - -	19	8	45·8	12	21·4	17	25·8	5	14·7	61	28·4
Professional or Clerical.	9	8	28·8	7	12·5	9	13·6	3	8·8	36	16·7
Industrial - - -	—	—	—	14	25·0	13	19·7	7	20·6	34	15·8
Farmers - - -	3	12	25·4	19	33·9	19	28·8	12	35·3	65	30·2
Land Work - - -	—	—	—	4	7·1	6	9·1	6	17·6	16	7·4
Unknown - - -	—	—	—	—	—	2	3·0	1	2·9	3	1·4

* The following cases of definitely rural trades or industries are classified under "Trade" and "Industrial" in the above table :—

Second Year.	Third Year.	Fourth Year.
9	3	1

The table given below illustrates in another way the gradually-increasing popularity which the school attained in the rural districts. The pupils are divided according as their places of residence were in towns such as Knaresborough, Wetherby, Harrogate, &c., or in small villages:—

Year.	Number of Entries.	
	Town.	Country.
1st Year - - - - -	48	19
2nd Year - - - - -	22	33
3rd Year - - - - -	28	39
4th Year - - - - -	13	22

The following table, which is intended to show the distances from which the school attracted pupils, may also be of interest here.

Year. — Nos. during First Term in each case.	Distance of Pupils' Homes from School.										
	2 miles or under.		Over 2 but under 5 miles.		Over 5 but under 10 miles.		Over 10 but under 15 miles.		Over 15 miles.		
	No.	Per- cent- age.	No.	Per- cent- age.	No.	Per- cent- age.	No.	Per- cent- age.	No.	Per- cent- age.	
First Year:—											
Boys - - - - -	15	39·5	3	7·9	1	2·6	3	7·9	—	—	
Girls - - - - -	5	13·1	1	2·6	9	23·7	1	2·6	—	—	
Total - - - - -	20	52·6	4	10·5	10	26·3	4	10·5	—	—	
Second Year:—											
Boys - - - - -	27	28·7	12	12·8	9	9·6	10	10·6	3	3·2	
Girls - - - - -	14	14·9	7	7·4	9	9·6	1	1·1	2	2·1	
Total - - - - -	41	43·6	19	20·2	18	19·2	11	11·7	5	5·3	
Third Year:—											
Boys - - - - -	33	25·6	10	7·7	18	13·9	16	12·4	6	4·7	
Girls - - - - -	19	14·7	6	4·7	12	9·3	5	3·9	4	3·1	
Total - - - - -	52	40·3	16	12·4	30	23·2	21	16·3	10	7·8	
Fourth Year:—											
Boys - - - - -	29	22·0	4	3·0	22	16·7	15	11·4	12	9·1	
Girls - - - - -	16	12·1	6	4·5	16	12·1	9	6·8	3	2·3	
Total - - - - -	45	34·1	10	7·5	38	28·8	24	18·2	15	11·4	

The growth of the school during the first four years of its existence is shown in the following table :—

—	First Year.	Second Year.	Third Year.	Fourth Year.
Number on Roll :—				
First Term - -	39	98	127	131

During the first year it was found necessary to modify the original idea to some extent. The age limit for entrance had to be lowered ; parents living in isolated places where long journeys were involved rightly insisted that the school for younger children of 9 or 10 should be the same as that for the elder brother or sister ; from this standpoint, and from the point of view of the school as a whole, it was found wise to admit children from the age of 10 years and thus establish a preparatory department.

THE CURRICULUM.*

In considering the details of the curriculum, it must be borne in mind that this is the record of an experiment actually in progress and by no means complete. The original intention expressed in the petitions was that the education given at the school should be definitely agricultural in character. The West Riding Education Committee, however, considered that it was educationally unsatisfactory to allow children of 12 years of age to specialise. Moreover, the preliminary education and general standard of the pupils was not sufficiently good to make such a course possible, even had it been desired. Ultimately a course of work was evolved which, although always treated from a rural standpoint, was mainly general in the first two years, the rural or domestic bias being increased in the third and fourth years. No attempt was made to teach Technical Agriculture, and this was on many occasions the groundwork of a farmer's approval of the school.

No special description is given of the work done in Domestic Subjects as it does not differ in essentials from that taken in a Secondary School of normal type. An account of this work is contained in the Interim Memorandum of the Board of Education on the Teaching of Housecraft in Girls' Secondary Schools, published in 1911.

* For a more detailed account of the practical portion of the curriculum see the Report of the Consultative Committee on Practical Work in Secondary Schools, published by the Board of Education, pp. 104-117. (Schemes of Practical Work in Science (Chemistry and Physics), Nature Study, Gardening, Woodwork, Poultry and Bee-Keeping ; Rural Secondary School, Knaresborough, Yorks.) (Cd. 6849. London : Wyman & Sons. 1913.)

The Diary System.

A period of twenty minutes each day is devoted to writing up a diary. Entries are made with reference to matters of (i) general, (ii) local, and (iii) personal interest. The pupils are invited to contribute items of general and local interest, and the teacher elicits from the class, and perhaps supplements, the information necessary for the compilation of the note. This affords an opportunity to interest the pupils in events of the past history of the world in general and of the locality in particular, and in current affairs. The meteorological observations for the day are recorded, and charts of these kept. "Nature Notes" dealing with sky, ground, river, birds, beasts, flowers, fruits, farm operations, crops, &c., are also reported and entered. In the lower Forms the entries are necessarily brief; in the upper Forms the pupils are expected to deal at somewhat greater length with selected topics, so that the entries tend to take the form of brief, or "skeleton," essays.

The following uncorrected extracts from pupils' diaries will show the general character and scope of this work in the various Forms:—

From Diary of Girl (aged 11) in Form IIIB. December 15th.

Events of General Interest. Oliver Cromwell was made Protector in 1653. Turner, the famous artist, died in 1851. The Battle of Colenso was fought in 1899.

Events of Local Interest.—The 1st XI. lost at Ashville College on Saturday, 3-6. The girls won at home 2-1. There will be a school party to-night. There is another strike in Leeds.

Event of Personal Interest. I am going to the party to-night.

Nature Notes. Wheat is about 6 inches high. Christmas Roses are in bloom. There are not many holly berries this year.

From Diary of Girl (aged 14) in Form IV.

November 27th.

The National Liberal Federation began their annual meetings at Leeds yesterday. The Chief Liberal Whip, Mr. Percy Illingworth, announced that the next General Election will be in 1915. Mr. Asquith will be speaking in Leeds to-day.

To-day is the anniversary of the death of Alexandre Dumas in 1895. He was a famous novelist and dramatist, and his most famous novel was *La Dame aux Camélias*.

It is the last day of Ripon Hirings to-day; those at Knaresborough yesterday were very poor, and men servants were very scarce. It was also a very quiet market; eggs were 5 to 5½ per shilling and butter was from 1s. 10d.—1s. 11d. per roll.

The weather is not very bright, but it is fine, there is a stiff breeze.

There are still a few wild flowers in bloom, such as Herb Robert, Pellitory, Ivy-Linaria and Daisies. These flowers I found when going a walk on Wednesday morning.

From Diary of Boy (aged 14) in Form IV.

October 29th.

Shirley Manor, the place that Charlotte Brontë depicted in her novel *Shirley*, has been burnt down by suffragettes. It is at Wyke, a place near Bradford.

In 1307, on this date, Edward II. visited Knaresborough. This was the first year of his reign and he had returned from the campaign in Scotland, and began nothing else but pleasure with Piers Gaveston. He came on a hunting expedition to Knaresborough. He also built the second castle for Piers Gaveston during the five years from 1307 to 1312.

The funeral of Sir Walter Raleigh took place on this date in 1618.

The pupils in the Upper Forms are expected to keep a list of books read, with brief comments. The following are examples:—

Book List of a Form V. Boy.

Author.	Title.	Date Finished.	Comment.
J. G. Wood	Half Hours in Field and Forest.	22nd March	Interesting.
—	The Medland Boys	23rd „	Good school tale.
Rider Haggard	King Solomon's Mines	2nd April	Ripping.
„	Alan Quatermain	10th „	„
—	Boy Crusoes	16th „	A good tale.
Capt. Mayne Reid.	The Rifle Rangers	29th „	Exciting.
—	Knights of the White Rose.	24th „	Interesting.

Book List of a Form IV. Girl.

Macfarlane	Life of Napoleon	1st October	Very good. The author gives a detailed account of his life and it is very interesting.
Jane Austen	Pride and Prejudice	14th „	Very good. Some of the characters are not unlike the characters in Goldsmith's "Viccar of Wakefield."

Book List of a Form IV. Girl—*continued*.

Author.	Title.	Date. Finished.	Comment.
Lord Lytton -	Night and Morning -	28th October	Very interesting though his style of writing is quite different to the two previous books.
H. M. Stanley -	Through Darkest Africa.	2nd November	Very interesting book, telling of Africa and Livingstone's life there.
Ballantyne -	Black Ivory - -	7th ,,	This is a most interesting book, especially if the above book is first read, for it helps one to understand it better.

English Language and Literature.

English being the only language included in the curriculum, it is considered of the highest importance, and more time is allotted to it than usual (*see* Time Table Analysis, p. 19).

Boys and Girls work together throughout the school. The subject is treated on the following lines :—

- (a) Literature is studied through the works of standard authors and the discussion and memorising of suitable passages of verse and prose. This is supplemented by home reading of selected books.
- (b) Little formal grammar is taught, it being regarded as the connecting medium between Literature and Composition, and treated naturally in relation to both.
- (c) Composition, oral and written, based upon the subject matter of the literature studied; to a large extent topics of rural interest are chosen. Attention is also given to letter-writing, and *précis* work.

History.

Knaresborough and the surrounding district are peculiarly rich in historic associations, which are utilised to the full in the history lessons.

The Course of the first year begins with the earliest records of Britain and ends with the early Kings of the Tudor House.

The second year's Course comprises the period from Renaissance and Reformation to the death of Cromwell, the third year's period extends from the Restoration to the reign of Edward VII.

The mode of treatment follows in the main the usual lines, but freedom from the rigidity of the Syllabuses for external examinations allows greater attention to be given to important matters relating to social development and constitutional growth, and less time is lost in the detailed discussion of wars and the fortunes of dynasties.

In the fourth year the Course departs further from traditional secondary school lines, as will be seen from the following outline syllabus:—

Survey of the previous three years' Course from the agricultural and economic points of view. The feudal system from beginning to end, land government connected therewith, as in the Court Leet, the Church and the Manor, the rise and fall of the worker on the land, feudalism in the towns, villein, copyholder, and farmer.

Economic problems, *e.g.*, poverty of the Tudor period, sheep-farming versus arable agriculture, effects of labour statutes in degrading the labourer, absence of local government, except "Vestry," changes in towns with breakdown of the guild system.

Stuart stagnation—Enthusiasm of the 18th Century produces the science of agriculture—Local government a product of the 19th and 20th centuries applied to all social aspects.

Mathematics.

In designing the Mathematical Courses the primary aim has been to stimulate interest by introducing at all stages as many examples as possible bearing upon the affairs of daily life—more particularly rural daily life—and by correlation with practical handwork, with laboratory work in science, with geography, and, for the girls, with domestic accounts.

Cumbersome complex fractions, cube root, recurring decimals, and uncommon weights and measures are omitted, but sufficient abstract work in Arithmetic, Algebra, and Geometry is retained to develop the power of concise logical statement, and to give facility in manipulation. In the third and fourth years of the Course the boys have ample opportunity for the practical application of their mathematical knowledge in Bookkeeping, Land Surveying, and Mensuration of tanks, haystacks, and the like.

The boys and girls work together in the Preparatory class, and for the first two years of the course.

Experimental Science (Physics and Chemistry).

The first and second years' Courses do not depart appreciably from the usual lines, as will be seen from the following outline:—

First Year.—Measurement of lengths, areas, and volumes. Use of the Balance. Density and specific gravity of solids and liquids. Change of state. Common properties of matter.

Simple examination and description of common substances. Suspension and filtration. Melting and dissolving. Solutions.

Crystals: nature and preparation. Finding soluble matter in soil.

Evaporation and boiling: everyday examples. Use of thermometers. Cooling effect of evaporation; use of hygrometer. Condensation—rain, mist and cloud. Distillation.

Study of air—Pressure of air. Barometer and Pump. Effect of heating metals in air. Rusting of iron.

Second Year.—Common acids and bases. Neutralisation. Formation of salts; preparation of some salt having connection with the soil (for boys) and with domestic work (for girls).

Hydrogen. Water—Rain, river, sea, medicinal, &c. Action of metals on water; protection of metals from action of water.

Carbonic acid and carbonates. Hard water; methods of softening. Silica.

Nitrogen and its compounds.

Sulphates, chlorides and phosphates.

In the above little difference is made between the work of the boys and that of the girls. By happily choosing the salts, &c., for examining, facts of importance to agriculture and domestic science can be dealt with.

Third and Fourth Years.—Here the course becomes definitely biassed towards agriculture and domestic science for boys and girls respectively.

Girls (a) Chemistry. Fermentation: action of yeast upon glucose, identification of the products.

Properties of alcohol, its uses as a solvent, &c., methylated spirit.

Acetic acid and vinegar. Detection of adulterants and estimation of percentage of acetic acid in vinegar. Action of vinegar upon implements and vessels in domestic use.

Starch: examination of various kinds with the microscope. Effect of heat and acids. British gum. Flour. Separation of starch and gluten.

(b) Physics. The effects of heat: expansion and change of state. Conduction: practical application of good and bad conductors in daily life, *e.g.*, Norwegian cooking-box, vacuum flasks, handles of vessels, clothing.

Convection and Radiation: application in heating and ventilation.

Capacity for heat and latent heat, with special reference to the important consequences of the peculiar properties of water as affecting climate, &c.

Boys. Elements of Mechanics.—Mass and weight. Force. Principle of moments and application to machines.

Lever, pulley, inclined plane, screw, &c.

Hydrometer, lactometer and "Gerber" for milk testing.

Heat.—As for girls with modification in practical applications.

Chemistry.—General methods of simple analysis, applied to determining the composition of plants, soils and fertilisers.

Approximate analyses of milk, butter and cheese.

Nature Study and Gardening.

Boys.—The main object in view in teaching these subjects is to equip the boys so that they may become efficient farmers or gardeners and may take an intelligent interest in the wild life around them. In practice it is found that the time-table for these two subjects cannot at all times be rigidly adhered to on account of the weather, exigencies of work, &c.; they must be regarded as closely related and, to a considerable extent, interchangeable.

The Course commences with the study of seeds and germination, including seed-testing, followed by that of the forms and uses of roots, stems, and leaves. Propagation by cuttings, layers, budding, and grafting is introduced here. The specimens used are, as far as possible, of agricultural or horticultural importance. Interspersed with the above, a few common insect pests are studied as they are found in the course of garden operations or field excursions. The pupils in this connection are taught to make free use of Board of Agriculture leaflets. Then follows the study of fruits and the dispersal of seeds. The structure and functions of flowers, pollination, and fertilisation is introduced here, and the pupils learn to recognise the natural orders to which plants of economic importance belong. At this stage, also, the systematic study of weeds is commenced. The above work suffices for the first two years of the Course; and, of course, certain parts, such, for instance, as the examination of economic and weed plants afford ample scope for revision and more detailed work in subsequent years.

In the third year the soil comes under consideration, the chief subject studied being the chemical and physical properties of soil-constituents and the relation between the nature of a particular soil and the proportions in which the various constituents are present. A careful examination is made of the soil and subsoil of the school garden. This is a stiff loam, derived from magnesium limestone, which, although fertile if properly treated, is very difficult to work when wet and equally so after a drought. From a teaching point of view this is, in one way, a distinct advantage, as it accentuates the necessity for the intelligent and timely tillage of intractable soils. The pupils are encouraged to bring from their own homes samples of soil for examination in school.

The sources, nature, value, and uses of the commoner artificial fertilisers and of farmyard manure follow naturally here, and their study is closely correlated with the cultivation of the garden-plots.

In the third and fourth years the more familiar grasses (useful and worthless) and clovers and their seeds come in for

considerable attention, together with the revision and extension of the botanical and zoological work of the earlier years.

In the fourth year elementary agricultural bacteriology and mycology become the principal objects of study. Here, again, the leaflets of the Board of Agriculture are found invaluable.

Throughout the whole Course excursions are made at intervals. In addition to the ordinary "nature-study" walks, visits are paid to farms and gardens, and the senior boys attend ploughing matches, &c.

The time table allots two periods per week to Gardening. Each plot measures about 18 × 24 feet, and is worked by two boys. The ordinary kitchen-garden crops only are grown, namely, peas, French and broad beans, cabbage of various sorts, cauliflower, broccoli, turnips, parsnips, carrots, beetroot, potatoes, lettuce, radishes, onions, shallots, and, in the top form, celery. The Norfolk four-course rotation has been explained, and an attempt is made to build up a garden rotation on similar lines.

Whilst it is necessary to give definite instructions with regard to distances between rows of various crops, their sowing, and so forth, the boys are encouraged to make their own suggestions, and the trial of those with any show of reason behind them is permitted.

Frames are used for raising young plants, and tomatoes are grown in a cold greenhouse.

Nature Study (Girls).—The work of the girls in the lower Forms is on similar lines to that of the boys; in the upper Forms, however, considerably less time being devoted to the subject (*see* Time Table Analysis, p. 19) the Course is necessarily restricted. No special periods are devoted to Gardening, which is taken as convenient in the time allotted to Nature Study. Each pair of girls cultivates a small plot (6 ft. × 12 ft.) and grows flowers—Chrysanthemums and Annuals, Sweet Pea, Cornflower, Godetia, Clarkia, Salvia, French Marigold, Soapwort, Alyssum, &c. The flowers are utilised for table decoration and in connection with Art work.

Extract from Garden Diary of a Boy (aged 13) in Form IIIA.

Week ending June 6th. *Work done.*—We planted out some Savoys on the school plots, 1 ft. 6 in. from the Cauliflowers. The land is still very dry, and the plants had to be watered.

Observations on Growth of Plants, &c.—The Broad Beans on the plots are in bloom. Turnips (last year's sowing) are in bloom. The Beetroot on the plots is about 1 in. high.

Observations on Wild Flowers, Birds, &c.—Guelder Rose is in bloom, also Rowan, Peonies, and Snowball. Pinks, Carnations, Persicaria and Butterwort are flowering.

Extract from Garden Diary of a Boy (aged 14) in Form IV. Week ending May 9th.

Work done.—Finished digging over ground broken up from grass. Put some Potatoes (Factor) on to our plot. We dibbled them in, about 6 in. deep and about 1 ft. apart.

Sowed French Beans in a drill about 2 in. deep, and the seeds were about 2 in. apart.

Planted out Leeks on our plots, 1 ft. apart.

We also sowed Beetroot in a trench about $\frac{1}{2}$ in. deep.

Observations.—Purple Orchids and Bladder Campions are in bloom, Gorse is also in full bloom. Swallows have been seen. Lilac is now in flower. Garlick, Mustard and Hedge Stachis, Yellow Dead Nettle and Muscatel are all in bloom. A grey Linnet's nest with eggs has been seen.

Geography.

This is taught on modern lines throughout, all the classes being in charge of a master who has had special training in the subject. The pupils do a good deal of practical work at all stages, such as the pacing of distances in various directions to get the idea of distance and locality as indicated by maps, the construction of sun dials, the modelling of earth surfaces in plasticene, exercises in contours, the reading of ordnance maps, and so forth.

The meteorological records are regularly charted in the pupils' individual chart-books, and the Wall Charts are supervised by senior boys.

The prices of Wheat, Barley and Oats are charted from the weekly Returns of the Board of Agriculture. It may be mentioned here, too, that the girls keep charts of the prices of eggs, butter and other produce in Knaresborough Market and in the markets of neighbouring towns.

Surveying.

This is taken by the boys in their third and fourth years.

In addition to the plane tables and clinometers of the usual school type, the pupils have the use of a full-sized (18 in.) Dumpy Level of standard pattern by Stanley, and of a good Prismatic Compass. They are thus in a position, towards the end of the Course, to familiarise themselves with the various refined adjustments of these instruments and to attempt work of a kind actually met with in a Surveyor's practice.

Boys who have been through the whole course are in a position to deal with the chief practical problems met with in laying out an estate or draining a farm.

Woodwork.

While the primary aim of educational handwork, namely, the development of all the faculties by the correlation of brain, eye, and hand, is kept in view, an appeal is made to the

interest of the boy by the construction of a series of models, of progressive difficulty, which are of practical utility in farm or garden.

The Course differs from that usually followed in Secondary Schools chiefly in the carrying out, by a class collectively, of much larger pieces of constructional work than are as a rule practicable or desirable. This will appear in the outline scheme given below.

First Year.—Exercises in the use of Hand, Tenon, and Rip Saws, Jack Plane, Try-Square and Marking Gauge. Nailing and Screwing. The following models are made:—Tree or Plant labels, Pales for Fencing, Dahlia Stakes (Square), Bench Hooks, Pea Guards, Garden Plot Markers, Boxes of various kinds (Seed Boxes, Nail Boxes, Potato-set Boxes with Handles, &c.).

Second Year.—Use of Smoothing Plane and Try-Plane, Bow Saw and Pad Saw, Mortising Gauge and Chisels.

Practice in making the following joints:—Tongue and Groove joint, Mitre joint, Double Lip joint, Mortise and Tenon joint.

The following models are made by individual pupils:—Mitre Boxes, Hammer Handles, Shafts for Rakes, Pales for Fencing, Posts for Wire Fencing. The class collectively have undertaken the erection of Hen Coops, a cold Brooder, Shelving, and a Range of Poultry Houses—the latter in conjunction with the Senior Forms.

Third and Fourth Years.—Dovetail joints—used in making boxes of various kinds.

The care of tools—grinding and sharpening.

The constructional work includes:—Full size Garden Frames and Lights with Mortise and Tenon Joints. Field or Garden Gates. Framing for Museum Cases and cupboard doors. Garden Wheelbarrow. Beehives (modern box type).

In addition to the above, small pieces of apparatus required in the Science Laboratory are made, such as Balance Bridges, Pipette Holders, &c.

Throughout the Course, the boys make Drawings to scale before commencing each piece of work.

Bee-keeping and Poultry-keeping.

Instruction in these subjects is given to both boys and girls in the third and fourth years by an expert visiting teacher. One period per week, for each Form, is devoted to the subjects throughout the Session.

The instruction in Bee-keeping is accompanied by as much demonstration and practical work in the school apiary as possible. The pupils are given opportunities of familiarising themselves with various modern appliances, and assist when practicable in winter-feeding, &c. The girls prepare the candy and syrup used for this, and the pupils assist in the preparation of the sections for market.

TIME-TABLE.

Day.	Class.	9 to 9.40 a.m.	9.40 to 10.20 a.m.	10.20 to 11 a.m.	11 to 11.10 a.m.	11.10 to Noon.	1.30 to 2.30 p.m.			4 to 4.15.	Evening Work.	
Monday	Girls Senior	Prayers Roll Diary and Scripture.	Cookery	Cookery	Recreation	Cookery	Hygiene	2.30-2.40 Recreation.	Needlework till 4	Close School.	Geography, Laundry- Work.	
	Girls Junior		Grammar	Arithmetic	"	History	Dietation		" "		Geography, History.	
	Boys Senior		Arithmetic till 10.40 (5 minutes interval.)		Manual Instruction, 10.45-12.15		Science		Practical Work in Laboratory till 4.		Gardening till 4	Geography, Recitation, Nature Study.
	Boys Junior		Grammar	Arithmetic	Recreation	History	Nature Study					Geography, History.
Tuesday	Girls Senior	Prayers Roll Diary and Scripture.	Laundry	Laundry	Recreation	Laundry	Arithmetic	2.30-3.10 Geography	Drill till 4	Close School.	Science, Grammar.	
	Girls Junior		Arithmetic	History	"	Geography	Essay	Arithmetic	"		Literature or Recitation, Cookery.	
	Boys Senior		Geography	Arithmetic	"	Nature Study	Recitation and Reading.	Drill	History till 4		History, Nature Study.	
	Boys Junior		Arithmetic	History	"	Geography	Essay	"	Arithmetic till 4.		Arithmetic, Recitation.	
Wednes- day.	Girls Senior	Prayers Roll Diary and Scripture.	Science (Theoretical).	English	Recreation	Drawing	Grammar	2.30-2.40 Recreation.	2.40-3.40 Arithmetic	3.40-4.0 Dietation	Close School.	Geography, History.
	Girls Junior		Cookery	Cookery	"	Cookery	Drawing		English	"		Science, Geography.
	Boys Senior		Arithmetic	English	"	Nature Study	Arithmetic		Drawing	"		Grammar, Mensura- tion, Hygiene.
	Boys Junior		English	Arithmetic	"	Reading and Recitation.	Drawing		Nature Study	Excursion		Science, Geography.
Thurs- day.	Girls Senior	Prayers Roll Diary and Scripture.	Practical Science.		Recreation	Music. (Paper work for non- Musical.)	Geography	2.30-2.40 Recreation.	2.40-3.20 Housewifery	3.20-4.0 History	Close School.	Arithmetic, Recitation and Literature.
	Girls Junior		Nature Study	Geography	"	"	Arithmetic		Science, Theoretical and Practical.	Gardening until 4		Arithmetic, Laundry- Work.
	Boys Senior		Grammar	Mensuration	"	"	Hygiene		Science, Theoretical and Practical.			Geography and History.
	Boys Junior		Nature Study	Geography	"	"	Arithmetic					Arithmetic, Literature.
Friday	Girls Senior	Prayers Roll Diary and Scripture.	Arithmetic	Literature	Recreation	Nature Study	Needlework	2.30-2.40 Recreation.	2.40-3.20 Needlework	3.20-4.0 Recitation and Reading.	Close School.	Cookery, Hygiene.
	Girls Junior		Laundry	Laundry	"	Laundry	"		"	Arithmetic		Grammar, History.
	Boys Senior		Arithmetic	Literature	"	Geography	History		Nature Study	Excursion		Arithmetic, Science.
	Boys Junior		Literature till 10.40 (5 minutes interval.)		Manual Instruction, 10.45-12.15		Arithmetic		English	Arithmetic		Grammar, History.

ANALYSIS OF TIME-TABLE 1911-12 IN HOURS PER SCHOOL WEEK.

NOTE.—The figures in italics indicate the average age of the pupils.

Subject.	Form V. (14-7).		Form IV. (14-5).		Form IIIa. (13-2).		Form IIIb. (12-3).		Form IIIc. (12-9).		Preparatory. (10-7).	
	Girls (14-7).	Boys (14-4).	Girls (14-5).	Boys (14-1).	Girls (13-2).	Boys (13-9).	Girls (12-3).	Boys (12-5).	Girls (none).	Boys (12-9).	Girls (10-7).	Boys (10-9).
Religious Instruction	2	2	2	2	2	2	2	2	—	2	2	2
Diary	13	13	13	13	13	13	13	13	—	13	13	13
English	13	21	13	33	32	61	43	6	—	64	53	14
Mathematics*	2	5	2	4	3	3	3	3	—	33	32	41
History	11	3	11	14	11	11	14	14	—	14	12	12
Geography	12	12	12	12	12	12	24	24	—	24	11	11
Science :												
Experimental Science	12	12	12	12	12	12	12	12	—	12	—	—
Hygiene	3	3	3	3	—	—	—	—	—	—	—	—
Nature Study**	3	3	3	3	12	24	12	12	—	12	12	12
Singing	3	3	3	3	3	3	3	3	—	3	11	11
Drawing	11	11	11	12	11	12	12	12	—	12	12	12
Brushwork	—	—	—	—	—	—	—	—	—	—	3	3
Domestic Subjects :												
Needlework	21	—	21	—	21	—	—	—	—	—	3	—
Cookery	21	—	21	—	21	—	—	—	—	—	—	—
Laundrywork	21	—	21	—	—	—	—	—	—	—	—	—
Handicrafts :												
Elementary Handwork	—	—	—	—	—	—	—	—	—	—	12	12
Woodwork	—	2	—	12	—	12	—	12	—	12	—	11
Gardening†	—	12	—	12	—	12	—	12	—	—	—	—
Poultry Keeping	—	3	—	3	—	—	—	—	—	—	—	—
Physical Exercises	3	3	3	3	3	3	3	3	—	3	3	3
Games and Recreation	31	11	31	11	31	11	31	11	—	12	24	22
Sundries	4	4	4	4	2	2	2	2	—	2	—	—
Total No. of hours per week	273	271	273	271	271	271	271	271	—	271	261	271

* Mathematics for boys includes : Surveying, Account-keeping, and Commercial Practice. † Arithmetic. ** Nature Study for girls includes Gardening.

HOMEWORK.

When it is remembered that many of the pupils leave home early in the morning, do not return till late evening, and may have farmwork to do before leaving or after reaching home, it will be understood that the amount of homework possible is small. As a rule the amount to be done at home was limited to 45 minutes. In addition, the last 20 minutes of each afternoon session was for some time devoted to preparation. This was found of advantage in another direction, for a large number of children had to leave school at a quarter to four in order to catch trains. This was not only a nuisance in class, but led to incomplete notebooks; by stopping lessons at 20 minutes to four, some satisfactory preparation was done and the notebooks kept in order. Recently an adjustment of the time during which the school is in session has been made and this practice has been discontinued.

AFTER-SCHOOL OCCUPATIONS.

Any opinion as to the way in which the school is meeting local requirements will be guided by the after-school life of the pupils. In this connection the following information about those who left during the first three years will be useful:—

BOYS.				GIRLS.			
<i>Occupation.</i>				<i>Occupation.</i>			
Farm work	-	-	22	Domestic work	-	-	} - 27
Surveying	-	-	3	Ladies' Companions	-	-	
Garden work	-	-	5	Home Life	-	-	
Trade	-	-	5	Confectioner	-	-	1
Clerical	-	-	6	Dressmaking	-	-	2
Colonial Life	-	-	6	Colonial Life	-	-	2
Industrial	-	-	3	Unknown	-	-	2
R.A.M.C.	-	-	1	Gone to other schools	-	-	4
Merchant Vessel	-	-	1				
Unknown	-	-	9				
Gone to other schools	-	-	13				
			<u>74</u>				<u>38</u>

The difficulty of getting openings in land work for boys who are not the sons of farmers is a very real one. In certain cases boys wishing to enter upon such employment were unable to find vacancies, and for want of more suitable occupation went on to the railway or into other similar employment. For obvious reasons, to enter upon land work as farm hands is not suitable. No doubt as the school develops and begins to exercise a real influence on the district this difficulty will decrease. Then, too,

there is the problem of the boy who leaves school at 14 and has not gone through the full course. These boys tend to swell the numbers of those entering occupations for which the school offers no definite preparation and for which it is not primarily intended.

The question may be asked whether pupils have proceeded from the school to the specialised agricultural instruction given at Garforth by the Agricultural Department of Leeds University. It could not be expected at the present date that any should have done so, as there has not yet been time for any pupil who has gone through the Course to proceed to Garforth. Apart from this, however, there are various reasons operating to make this difficult, viz., the urgent need of their labour on the farms in the case of those who are sons of farmers, the early age at which the pupils leave the Secondary School, and the distance of Garforth from their homes. The most significant point, however, is that there is at present no educational provision to carry the pupils through the period which must elapse between leaving the school and entering Garforth. This matter is further discussed in the conclusions to this report.

The cases of those who have gone to other schools need explanation. It must be remembered that quite often in the country, when the parent changes his place of work he goes some distance, and his family moves with him. The 17 cases referred to in the table given below are accounted for as follows:—

Father or Guardian left district	-	-	-	-	-	7
Pupil wished to enter Profession:—						
Ministry	-	-	-	-	-	1
Teacher	-	-	-	-	-	3
Doctor	-	-	-	-	-	2
Personal reasons	-	-	-	-	-	4
						<hr/>
						17
						<hr/>

From this it appears that only 6 pupils left the school because the curriculum was unsuitable.

With regard to those who wished to become teachers, as has already been explained, previous to the opening of this school the County Council had established a Secondary School of normal type at Harrogate to serve an area including the Knaresborough district, and there was an understanding with the Governors of the Harrogate School that the work of the new school at Knaresborough should so far as possible not be allowed to overlap that done at Harrogate. Consequently it was decided that intending teachers should not be received at Knaresborough. The experience gained during the five years'

existence of the Knaresborough School rather tends to show, however, that the work done there would in many respects be an ideal preliminary training for teachers in rural elementary schools. The Harrogate School is now well filled and it has become a matter for very careful consideration whether the restriction at Knaresborough against intending teachers should not be removed. The chief difficulty is that in the examinations qualifying for entrance to a Training College, a candidate is seriously handicapped unless a foreign language is taken.

As regards the remaining three cases of removal to another school, the pupils wished to enter professions having Entrance Examinations requiring French and Latin, and it was therefore necessary for them to go elsewhere.

In the case of the girls who have been through the Course provided at the school, the most obvious careers open to them, apart from home life, which will no doubt always claim the largest proportion, are as teachers of Domestic Subjects, Horticulture, Dairy Work, Poultry-keeping or Bee-keeping. The Committee offer annually at least two scholarships for women desiring to enter upon courses of training other than Degree Courses at Universities. These scholarships should prove of great assistance to girls from this school.

FINANCE.

The school is in receipt of grant from the Board of Education under Article 36 of their Regulations for Secondary Schools. In addition the Board have made for three years a special grant of 150*l.* to the school under Article 39 of their Regulations. Owing to the fact that it has not been utilised as a place of training for future Elementary School Teachers the school has not earned the 1*l.* grant paid under Article 38 of the Regulations. It will, however, qualify for grant for the Session 1913-14, this Article having been so revised that grant no longer depends upon the presence in a school of intending elementary school teachers, but upon the number of pupils in attendance between 15 and 18 years of age. It has received capitation grants from the County Council on their usual scale, the only other sources of income being fees (*see above*, p. 4) and sale of materials, the latter a very small item. To meet the annual deficit upon the working of the school, the County Council have, in accordance with their usual custom, levied a special rate upon the townships regarded as served by it. In view, however, of the school's special character, and of the fact that it benefited a larger and more scattered area than it was felt desirable to rate for the deficit, one-fourth of the deficit each year has been met from the General County rate, the remaining three-fourths being levied on the locality.

Below are given details of the income and expenditure of the school during the first four years of its existence together with the cost per head of total maintenance and of staff. An estimate of the income and expenditure for the Session 1912-13 together with the cost per head of staff and total maintenance is also given.

Session.	Numbers in Attendance.			Income.	Expenditure.	Cost per Head.		Remarks
	1st Term.	2nd Term.	3rd Term.			Staff.	Total.	
				£ s. d.	£ s. d.	£ s. d.	£ s. d.	
1908-9 - -	38	54	66	589 15 0	1,110 18 4	13 1 7	20 19 2	
1909-10 - -	91	100	99	1,011 11 1	1,587 18 10	10 7 4	16 7 5	
1910-11 - -	127	128	129	1,262 3 0	1,685 6 8	8 17 3	13 3 4	
1911-12 - -	131	121	125	1,328 16 0	1,788 6 0	9 15 1	14 4 7	Additional Assistant Master appointed.
1912-13 - -	112	109	106	1,364 18 9	1,902 13 3	11 8 3	17 9 1	

NOTE.—(1) The cost per head in the above table is based on an average of the numbers in attendance for the three terms.

(2) During the earlier years of the school's existence, a large number of structural alterations, &c., were necessary. These were for the most part charged to the maintenance account. As, however, they are strictly capital charges, they have been omitted from the above statement.

Although the strictest economy consistent with efficiency has been exercised in the administration and working of the school, the following special circumstances make it difficult to reduce further the cost of maintenance :—

- (1) The necessity of teaching the boys and girls separately to a far greater extent than is usual in a mixed Secondary School, on account of larger number of special subjects and the greater amount of time devoted to them. This, of course, results in a larger staff in proportion to the numbers in attendance than would be normal.
- (2) The necessity, by reason of the large amount of practical work, of smaller classes than usual.
- (3) The expense of the equipment and material for practical work other than Science, which is considerably in excess of what is required at the normal Secondary School.

DAY AND WEEKLY BOARDERS.

From the nature of things a school of this type must have a boarding side and the fee must be reasonable. The Boarding

Fee of 10*l.* 10*s.* per term, with 15 per cent. reduction for weekly boarders was found generally acceptable. The boys boarded in the Head Master's House, the girls in a hostel in the town over which the Head Master exercised supervision. Quite a useful development would be a girl's hostel in charge of the Domestic Subjects Mistress, where the older girls in turn could personally be responsible for the arrangements for a month, thus obtaining opportunity to apply their domestic training under actual working conditions.

The provision of a cheap mid-day meal is essential. More than half the pupils cannot return home in the dinner hour, and they divide into two classes: (a) those who bring dinner, and (b) those who do not. Those who bring dinner pay a nominal sum of 1*s.* per term and use the Domestic Subjects Room. If they care to bring things that require cooking or warming, this is done under the supervision of some of the elder girls, who are responsible for the general cleanliness and order of the room. Those who do not bring dinner are provided for in the Dining Hall at a charge of 6*d.* per day.

CONCLUSIONS.

A consideration of the experiment has led to the following conclusions:—

- (i) An education of the type projected is possible, practical and valuable.
- (ii) Rural children who do not usually respond well to a literary type of education do respond to, and develop individuality, expressiveness and resource through, a practical education in close touch with their daily life and probable future occupation.
- (iii) In a school of this type it is not feasible to exact from parents of intending pupils an expression of opinion as to the child's future occupation. The more cautious declined to deal with the point at all. When any assurance was given it was of little real value: it was manifestly difficult to know what capabilities a boy of 11 or 12 from a country Elementary School might develop in the new atmosphere of a Secondary School. In this connection a point of interest may be noted. Quite often at the end of a year a boy had made marked progress, shewed promise and his terminal report said so. This produced a visit from the boy's mother, often a farmer's wife, with the query, "My lad seems getting on well; don't you think he's too good to be a farmer?" The mother's influence in getting boys from rough work on the land to the apparent gentility of office life is a factor of considerable

importance. There was also a good deal of opposition to the practical nature of the domestic work of the girls, but after a time this lessened though it did not vanish.

FURTHER DEVELOPMENT OF THE EXPERIMENT.

The following appear to be the most important lines along which the experiment at this school should be further developed :--

- (i) To work out the scheme through a complete four years' course with normal pupils under normal conditions. Partly by reason of staffing difficulties owing to the unusually rapid growth of the school, partly because the school did not immediately attract the genuine rural pupil, this has not been possible up to the present.
- (ii) The inclusion of languages in special cases to meet the needs of those desiring to become Land Agents, Veterinary Surgeons, Teachers in Public Elementary Schools, &c.
- (iii) The development of the work at the top of the school so as to co-ordinate it definitely with that done at Garforth. At present it is difficult to provide satisfactorily for the further education of boys from a school of this type who wish to proceed to work on the land, and fit themselves for it by some technical training. It is essential for a boy who, after taking the full course, leaves the school at the age of 16, to gain practical experience on the land for some two seasons, before he can with advantage take the courses offered by a farm institute or by the Agricultural Department of the Leeds University at Garforth. This in itself is a difficulty in the case of boys who are not farmers' sons, as not only will no wage be obtained during this period, but a premium will probably have to be paid. Further there is the difficulty that no provision exists to enable such a boy to maintain and develop his general education during this period.

The following would appear to be a possible way of meeting the difficulty. On leaving the school in July the boy might go on to the land until November. During the winter months he could attend a local organised day course such as is contemplated by the Board of Agriculture, returning to the land in the spring. After another season's work he could proceed either to a farm institute or to a general course at Garforth. As a preferable alternative it

might be possible to meet the needs of this intermediate period by extending and specialising the work at the top of the school, even so far as to work a small holding, as a preliminary to the farm institute. This scheme, with some slight modifications, could equally well be applied to girls.

Interest in the experiment has been widespread and the school has been visited by a large number of representatives of Education Authorities. Information has been supplied to the Consultative Committee of the Board of Education and to a number of persons interested in the administration of Secondary and Continuation Schools in the United Kingdom and the Colonies.

This pamphlet and those on the opposite page can be obtained, either directly or through any Bookseller, from WYMAN AND SONS, LTD., 109, FETTER LANE, E.C., and 54, ST. MARY STREET, CARDIFF; or H.M. STATIONERY OFFICE (SCOTTISH BRANCH), 23, FORTH STREET, EDINBURGH; or E. PONSONBY, LTD., 116, GRAFTON STREET, DUBLIN; or from the Agencies in the British Colonies and Dependencies, the United States of America, the Continent of Europe and Abroad of T. FISHER UNWIN, LONDON, W.C.

A Hearson's Incubator and Foster-mother are in use two or three times each season, and senior girls and boys, alternately, have charge of the successive hatchings. The temperatures are systematically observed and recorded on charts of the usual form, and the results of the periodical egg-testings noted. The poultry runs are so constructed that the egg-record for any pen is plainly displayed, and the pupils are expected to note the egg-laying capacities of the various breeds.

Art.

Art occupies $1\frac{1}{2}$ hours per week for all Forms. The course is wide in its scope both as regards the objects depicted and the variety of *media* employed—pencil, charcoal, crayon, water colour, and modelling clay.

The rural bias finds ready expression in the special attention devoted to the representation of objects of interest to the student of nature. Careful drawings are made of plant forms, with enlarged detailed studies of buds, leaves, leaf-insertion, tendrils, fruits, &c.

Studies in pencil, crayon, and water-colour are also made of birds' feathers, birds (from stuffed specimens, of which the school possesses a good collection), birds' eggs, butterflies, and moths.

The principles of design are also dealt with, and the girls make original designs for use in connection with needlework.

THE QUESTION OF FOREIGN LANGUAGES.

It is plain from the number of queries addressed to the Head Master that this matter is one of widespread interest and importance. On educational grounds there is no necessity for the inclusion of foreign languages in the curriculum of the school. Foreign languages are, however, required in the qualifying examination of several professions of a definitely rural nature, *e.g.*, the examinations of the Surveyors' Institute and of the Royal College of Veterinary Surgeons, as well as for the Degree Course in Agriculture at Leeds University. It is to be regretted in a school otherwise unfettered by the demands of external examinations and deriving great advantage from the freedom, that this question should arise. So long, however, as certain professions make a knowledge of foreign languages a *sine qua non* in their qualifying examinations, it would seem that the school should make the necessary provision. Generally speaking, not more than 5 per cent. of the pupils in a rural school find opportunities for the application of a knowledge of either French or Latin. So small a number as this can be dealt with tutorially.

A practical solution of the problem is found through the Diary System, or some similar system where record-making, composition, mental arithmetic, etc., occur throughout the

school at a common time each day. The few who require languages can be withdrawn from this work after the first year, and collected under one instructor. In the third and fourth year such pupils can, in addition, be withdrawn from gardening or the excursion. In this way some $2\frac{1}{2}$ to 5 hours can be obtained in each week without disturbing the general working of the school.

ORGANISATION OF WORK.

It will be understood that at first only tentative arrangements were possible. The 38 pupils of various educational attainments and of wide age range, were divided into two sections, senior and junior, the boys being separated from the girls for practical work. This employed the whole available staff.

The time-table given opposite showing this preliminary organisation may prove of interest.

In the second year, a large influx of pupils made it possible to begin to arrange the school on something approaching permanent lines. The school was divided into a Preparatory Form for the younger pupils, and Forms III. and IV., Form III. being about the average of a Third Form in a Secondary School, Form IV., a rather nondescript collection of older children.

In the third year, Form II. was introduced and Form III. broken up into IIIA. and IIIB. Owing to the fact that the boys increased more rapidly than the girls, a sort of overflow Form—IIIC.—consisting entirely of boys became necessary. Later the arrangements were substantially those of a normal Secondary School.

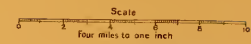
In the earlier years of the course the ordinary educational subjects were below, the practical work above, the normal standard. This weakness in the ordinary subjects was to some extent attributable to the low standard of the pupils on entering; as they passed through the school it tended to disappear.

Generally speaking, boys and girls work together until the end of the second year, except in practical subjects, when Domestic subjects for the girls balance woodwork and gardening for the boys. At the beginning of the second year, except for English subjects, music and physical instruction, the sexes are separated.

A Time Analysis for the fourth year is given on p. 19: this is not, of course, in every respect ideal, being governed, as must be the case in every school, by class-room accommodation, staff, size of classes, and the particular conditions of the school.

KNARESBOROUGH RURAL SECONDARY SCHOOL. - AREA OF SUPPLY.

YORKSHIRE WEST RIDING.



- County Borough Areas. [hatched box]
- Borough Areas. [dotted box]
- Railways. [line with cross-ticks]

- Schools on the Grant List -
 for Boys [square with dot] 10- Girls [square with dot] 11. for Boys & Girls [square with dot] 12.
 Schools on the Efficient List, not on the Grant List
 for Boys [square with dot] 13. for Girls [square with dot] 14. for Boys & Girls [square with dot] 15.

- Number of Boarders [circle with dot] 1. Number of Day Scholars [square with dot] 2.
 Boys in ordinary type, Girls in italic type

Knareborough Urban District	[square with dot] 52. [circle with dot] 41
Harrogate Borough	[square with dot] 4. [circle with dot] 7
Pontefract Borough	[square with dot] 1. [circle with dot] 2
Durham County	[square with dot] 2
Lancashire County	[square with dot] 1



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